

IMPLEMENTING ANNEX B

TO THE

BASIC EXCHANGE AND COOPERATIVE AGREEMENT

BETWEEN

THE NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
OF THE
DEPARTMENT OF DEFENSE
OF THE
UNITED STATES OF AMERICA

AND

THE ADMINISTRATION OF LAND AFFAIRS, GEODESY AND
CARTOGRAPHY , ARMED PROTECTION SERVICE AND
THE CIVIL AVIATION AUTHORITY
OF
MONGOLIA

CONCERNING

GEOSPATIAL INFORMATION AND SERVICES COOPERATION

AERONAUTICAL PRODUCTS, DATA, PUBLICATIONS, AND RELATED GEOSPATIAL
INFORMATION AND SERVICES MATERIALS

This Implementing Annex B Concerning Aeronautical Products, Data, Publications, and Related Geospatial Information and Services Materials is entered into pursuant to the Basic Exchange and Cooperative Agreement between the National Geospatial-Intelligence Agency (NGA) of the Department of Defense of the United States of America and the Administration of Land Affairs, Geodesy and Cartography on behalf of the Civil Aviation Authority of Mongolia Concerning Geospatial Information and Services (GI&S) Cooperation.

1. PURPOSE

1.1. The purpose of this Implementing Annex B is to define arrangements for the exchange of aeronautical products, data, publications, and related Geospatial Information and Services (GI&S) materials and the provision of co-production support services of mutual interest between the Department of Defense of the United States of America and the Mongolia charting organizations.

1.2. For the purpose of this Annex B the designated organizations of the parties will be as follows:

1.2.1. Until designated otherwise by Mongolia , the organization is ALAGaC.

1.2.2. Until designated otherwise by the US, the organization is the NGA Office of International and Policy.

2. MATERIALS TO BE EXCHANGED/PROVIDED

2.1. All aeronautical products, data, publications, and related GI&S materials provided under this Annex shall be done according to the shipping instructions in Section 4 (below) - "Shipment of Materials."

2.1.1 Library Copies of:

2.1.1.1. Aeronautical Products: Library copies of aeronautical products identified in Appendix I shall automatically be supplied by either Party to the other without charge. Additional copies of aeronautical products from Appendix I shall be requested in accordance with Appendix III and may be provided by either Party to the other.

2.1.1.2. Flight Information Publications (FLIPs): Library copies of FLIPs as identified in Appendix II shall automatically be supplied by either Party to the other without charge. Requests for additional copies of FLIPs and related data shall be considered and provided by the producing Party to the other Party in accordance with the terms of a Foreign Military Sales (FMS) Case or equivalent process.

2.1.2. Reproduction Materials: Reproduction material (preferably in digital format) for all aeronautical products may be requested and provided by the parties. NGA reserves the right to add a National Stock Number (NSN) and bar code, or similar means of identification, to assist in the stocking and distribution of these products.

2.2. Digital Aeronautical Data: Digital aeronautical products, data, publications, and related GIS materials transferred under the provisions of this Implementing Annex will be provided in raster and/or vector product format, upon request and without charge.

3. USE AND RELEASE

3.1. All exchanged aeronautical products, data, publications and related GI&S materials may be made available to the public for safety of navigation purposes unless the materials carry distribution caveats (e.g. LIMITED DISTRIBUTION) prohibiting their public release.

4. SHIPMENT OF MATERIALS

4.1. All shipments of aeronautical products, data, publications, and related GI&S materials by either Party to the other shall be accompanied by appropriate transmittal documents that list the contents of the shipment.

4.2. All aeronautical products, data, publications, and related GI&S materials to be exchanged under this Implementing Annex shall be sent free of freight charges. All shipment costs shall be borne by the sending Party.

4.3. All packages shall be clearly marked with the notation "UNITED STATES/MONGOLIA BILATERAL GI&S AGREEMENT EXCHANGE MATERIAL- NON REIMBURSABLE."

4.4. Addressees for shipment of material to be exchanged are provided in Appendices I and II under paragraph 3 - "Shipping Instructions."

5. VALIDITY

5.1. This Implementing Annex shall enter into effect on the date of the last signature and shall remain in effect in accordance with ARTICLE XVI, AMENDMENT, WITHDRAWAL, TERMINATION, ENTRY INTO EFFECT AND DURATION of the Agreement.

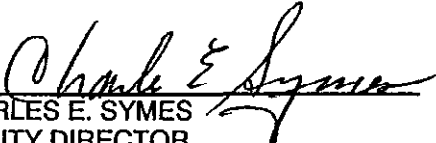
16 March 2004

4. SIGNATURES


IN WITNESS WHEREOF, the undersigned, being duly authorized, have signed this Agreement.
This Agreement is signed in duplicate in the English language.

FOR THE NATIONAL GEOSPATIAL-
INTELLIGENCE AGENCY
DEPARTMENT OF DEFENSE
UNITED STATES OF AMERICA

FOR THE ADMINISTRATION OF
LAND AFFAIRS, GEODESY AND
CARTOGRAPHY, THE MONGOLIAN
ARMED PROTECTION FORCE, AND THE
CIVIL AVIATION AUTHORITY
MONGOLIA


CHARLES E. SYMES
DEPUTY DIRECTOR
OFFICE OF INTERNATIONAL AND POLICY
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

22 March 2004
DATE


DR. SHAIRII BATSUKH
CHAIRMAN
ADMINISTRATION OF LAND AFFAIRS,
GEODESY AND CARTOGRAPHY

22 March 2004
DATE

APPENDIX I
TO
IMPLEMENTING ANNEX B
FOR
ACQUISITION OF AIRBORNE GRAVITY DATA OVER MONGOLIA

1. PURPOSE

The purposes of this Appendix are to define arrangements between the National Geospatial-Intelligence Agency (NGA) and Administration of Land Affairs, Geodesy and Cartography (ALAGaC) of Mongolia for the initiation of airborne gravity surveys over Mongolia. The time frame to begin this activity is 2004, with airborne gravity field surveys planned to begin by September 2004, and additional surveys to be determined.

2. RESPONSIBLE AGENCIES

2.1. For United States:

National Geospatial-Intelligence Agency

2.2. For Mongolia:

Administration of Land Affairs, Geodesy and Cartography (ALAGaC)

3. AIRBORNE GRAVITY SURVEY

3.1. NGA and ALAGaC have expressed a willingness to initiate an airborne-based gravity (aerogravity) survey over mountainous northwestern Mongolia to improve the Mongolian geoid. The data will close a major gap in the Central Asian gravity coverage, providing future enhancements for the WGS 84 gravity field models (EGM200x). The area will be surveyed with aerogravity lines of 10 nautical mile spacing at flight elevations over the topography on a region-by region basis (typically 1000 feet). NGA will downward continue the airborne data to the topographic surface to be utilized in the WGS 84 gravity modeling efforts underway.

3.1.1. Gravity collection methods:

3.1.1.1. Gravity measurements shall be made with modified LaCoste & Romberg airborne/sea

gravimeters augmented by inertial sensors. All data will be referenced to the International Gravity Standardization Net of 1971 (IGSN 71) and the latest version of WGS 84.

3.1.1.2. The gravity collected from these surveys should be accurate to less than 3 milligals RMS with a resolution of 10 km or less.

3.1.1.3. Airborne gravity measurements shall be tied to absolute gravity base stations by land gravimeters. NGA will help in providing access to such information.

3.1.1.4. Horizontal control shall be accomplished as follows:

3.1.1.4.1. Surveys should be performed in kinematic GPS mode using GPS WGS 84 base stations as reference.

3.1.1.4.2. Observe both gravity and GPS from the starting kinematic GPS reference and gravity base stations.

3.1.1.5. Mongolian survey organizations will support the operation of kinematic reference stations at base airports as required.

4. SCHEDULES

Airborne gravity data from surveys initiated in 2004 will be processed by NGA and be provided to ALAGaC by March 1, 2005.

5. RESPONSIBILITIES OF COOPERATIVE AGENCIES

NGA:

5.1. Shall fund the aerogravity field survey costs subject to the availability of funds.

5.2. Shall process the airborne gravity data and provide complete data set to ALAGaC. The field survey and processed aerogravity results will be provided on CD-ROM or ZIP-disk using ASCII text format.

5.3. Shall assist in the development of the Mongolian Geoid utilizing the newly collected aerogravity.

5.4. Shall establish at least two absolute gravity stations in Mongolia to be used as reference for the aerogravity survey.

ALAGaC:

6.1. Shall provide all existing surface gravity and elevations in Mongolia to integrate with the aerogravity.

6.2. Shall assist in the aerogravity survey by obtaining all permissions and coordinating on logistics.

6.3. Shall participate by surveying necessary surface gravity and GPS during the aerogravity survey. The measured gravity and GPS will be provided to NGA on CD-ROM or ZIP-disk using ASCII text format.

7. DELIVERY OF DATA

7.1. Data to be exchanged under this agreement shall be sent free of freight charges.

7.2. Addresses for shipment of data to be exchanged under this arrangement are

7.2.1. NGA St. Louis

Attn: PTRG, Mail Stop L-41

3838 Vogel Road

Arnold, MO 63010-6238

U. S. A

7.3.1. Administration of Land Affairs, Geodesy and Cartography (ALAGaC)

Barilgachdyn Talbai - 3

Chingeltei District

Ulaanbaatar 211 238

MONGOLIA

8. USE OF DATA

The airborne gravity data resulting in the co-production effort set forth in this appendix will be held by NGA and the Government of Mongolia for government purposes.

APPENDIX II
TO
IMPLEMENTING ANNEX B
FOR
AIRFIELD INITIATIVE SURVEY

1. The Purpose of this Appendix to the Implementing Annex B is to document cooperative survey and related activities to enhance flight safety and expedite the exchange of critical flight safety information. The cooperative activities are described in this Appendix. The Parties may amend this Appendix by the exchange of letters.
2. The National Geospatial-Intelligence Agency (NGA) and the Civil Aviation Authority of Mongolia (CAAM) will work together to mutually develop current WGS 84 airfield survey data in activities set forth in this Appendix.

2.1. NGA.

2.1.1. NGA is interested in obtaining airfield survey information in Mongolia and worldwide to improve the safety of flight worldwide. When initiated, NGA would provide a survey team to obtain this information, subject to the availability of resources and other requirements. NGA would assist with training in the program specifications.

2.1.2. NGA would assist the CAAM survey team through equipment loans as available.

2.1.3. NGA would present the results in a digital format incorporating feature locations, control points, vertical obstructions and terrain data.

2.1.4. NGA would establish a funding mechanism, subject to the availability of resources, under which CAAM will be reimbursed, for incidental expenses of the survey team incurred in performance of the survey including the initial training, if required. Incidental expenses will include the specific expenses for travel, per diem, and accommodations

2.2. CAAM.

2.2.1. CAAM would be responsible to provide survey information for Buyant-Ukhaa Airport.

2.2.2. NGA and CAAM would coordinate all activities of the survey team.

2.2.3. CAAM would provide any necessary logistical support as needed by the survey teams.

2.2.4. CAAM would assume the costs for salaries of the CAAM survey team members.

2.2.5. CAAM would arrange for all necessary airport access permissions for the survey team.

2.3. Shipping Instructions. The following addresses shall be used for shipments of all FLIP products, data, publications, and related GI&S materials provided under this Appendix. The cost of the shipping will be sustained

16 March 2004

by the originating agency.

TO THE UNITED STATES OF AMERICA:

2.3.1. Send specified copies of any Mongolia-produced airfield survey by AIRMAIL to:

National Geospatial-Intelligence Agency
Aeronautical Safety Division
Airfield Initiative Program Office
Mail Stop L-27
3838 Vogel Road
Arnold, MO 63010-6238

Telephone: (314) 263-4671
FAX: (314) 263-4813
Email: RBAI@NGA.MIL

TO MONGOLIA:

2.3.2. NGA produced Airfield Survey and Digital Airfield Elevation Model incorporating feature locations, control points, vertical obstructions and terrain data by AIRMAIL to:

Civil Aviation Authority of Mongolia
Air Traffic Services Department
Buyant-Ukhua Airport
Ulaanbaatar-34, Mongolia

Telephone: (976) 982013 or 986055
FAX: (976) 11-379981

2.4. Control of the Survey Data and Information. Upon completion of the surveys, NGA will provide the data to CAAM. NGA encourages the sharing of this data to the world civil aviation community to help ensure the safety of navigation. NGA will control the data and only share it with the US Government Agencies.

APPENDIX III
TO
IMPLEMENTING ANNEX B
FOR
AERONAUTICAL PRODUCTS, DATA, PUBLICATIONS, AND RELATED GEOSPATIAL INFORMATION
AND SERVICES MATERIALS

1. At the sole discretion of the National Geospatial-Intelligence Agency (NGA), it may satisfy the Mongolia Administration of Land Affairs, Geodesy and Cartography (ALAGaC) and Mongolia Civil Aviation Authority (CAAM) requests for copies of any NGA-produced aeronautical products, data, publications, and related GI&S materials, with the exception of those items subject to other bilateral agreements or other restrictions.
2. At the sole discretion of ALAGaC and CAAM, it may satisfy NGA requests for copies of any Mongolia - produced aeronautical products, data, publications, and related GI&S materials, with the exception of those items subject to other bilateral agreements or other restrictions.
3. Distribution of the items exchanged upon request shall be as specified in paragraph 3 - "Shipping Instructions", Appendices I and II of Implementing Annex B.
4. Shipping Instructions. The following addresses shall be used for shipments of all aeronautical products, data, publications, and related GI&S materials provided under this Appendix. The cost of the shipping will be sustained by the originating agency.

4.1. TO THE UNITED STATES OF AMERICA:

3.1.1. Mongolia -produced aeronautical products, data, publications, and related GI&S materials (library copies, reproduction material, catalogs, specifications, publications, etc.), send to:

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| a. National Geospatial-Intelligence Agency
Aeronautical Office Asia/Pacific
900 Hangar Avenue (Hangar 4)
Hickam AFB Hawaii 96853-5246 U. S. A.
TELEPHONE: (808) 449-7305/6
FAX: (808) 449-7308 (Primary)
(808) 449-6665 (Secondary)
email: NGA.aero@hickam.af.mil | b. National Geospatial-Intelligence Agency
Aeronautical Safety Division (MS L-27)
Aeronautical Services Office (ASO)
3838 Vogel Road
Arnold, MO 63010-6238
TEL: (314) 263-8036 or 8037
FAX: (314) 263-4997 |
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4.2. TO MONGOLIA :

4.2.1. NGA-produced aeronautical products, data, publications, and related GI&S materials (library copies, bulk shipments / operational stocks, reproduction material, catalogs, specifications, publications, etc.), would be sent to:

Mongolia Administration of Land Affairs, Geodesy and Cartography (ALAGaC)

Barilgachdyn Talbai – 3

Chingeltei District

Ulaanbaatar 211 238

MONGOLIA

TELEPHONE: +(976) 11-329-638

FAX: +(976) 11-322-683

EMAIL: ALAGAC@mongol.net